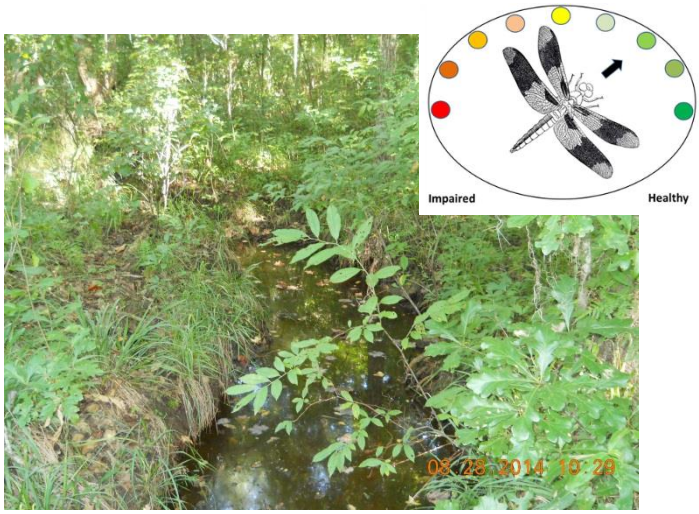
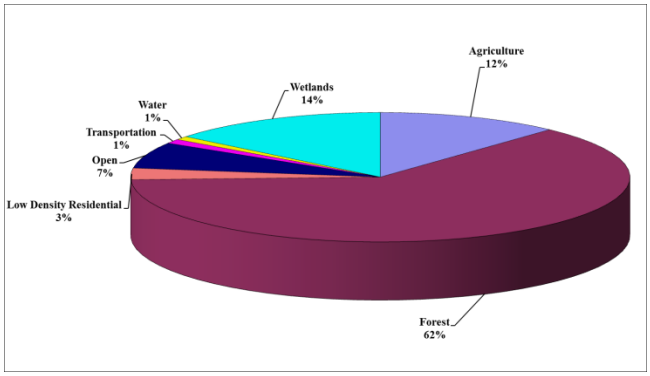
Waterbody: Tall Timbers Creek



Basin: Lake Iamonia

Tall Timbers Creek is a tannic stream located in northwestern Leon County. The stream flows south under County Road 12 through the Tall Timbers Research Station and Land Conservancy, eventually entering Lake Iamonia on the north shore of the lake.

While the following pie chart shows the majority of the 574 acre watershed is relatively undeveloped, residential, agricultural, and transportation uses make up approximately 16% of the watershed. Increases in stormwater runoff, and waterbody nutrient loads can often be attributed to these types of land uses.



Background

Healthy, well-balanced stream communities may be maintained with some level of human activity, but excessive human disturbance may result in waterbody degradation. Human stressors may include increased inputs of nutrients, sediments, and/or other contaminants from watershed runoff, adverse hydrologic alterations, undesirable removal of habitat or riparian buffer vegetation, and introduction of exotic plants and animals. Water quality standards are designed to protect designated uses of the waters of the state (*e.g.,* recreation, aquatic life, fish consumption), and exceedances of these standards are associated with interference of the designated use.

Methods

Surface water sampling was conducted to determine the health of Tall Timbers Creek and met the collection and analysis requirements of the Florida Department of Environmental Protection (FDEP).

Results

The nutrient thresholds and results are found in Table 1. According to FDEP requirements, Numeric Nutrient Criteria (expressed as an annual geometric mean) cannot be exceeded more than once in a three year period. The State criteria were not exceeded for either parameter.

Table 1. FDEP's total nitrogen and phosphorus criteria for streams applied to Tall Timbers Creek. The absence of data mean there was not enough data collected (due to lack of water) to fulfill data requirements.

Tall Timbers Creek	Total Nitrogen Threshold 1.03 mg/L	Total Phosphorus Threshold 0.18 mg/L
2006- 2007	-	-
2008	0.22	0.03
2009	0.17	0.04

Tall Timbers Creek	Total Nitrogen Threshold 1.03 mg/L	Total Phosphorus Threshold 0.18 mg/L
2010	0.23	0.04
2011- 2012	-	-
2013	0.11	0.03
2014	0.21	0.02

Dissolved Oxygen (DO)

As Figure 1 shows, Tall Timbers Creek seldom met the Class III criteria for DO. Low gradient, tannic streams typically have low DO levels which are further exacerbated by low water conditions.

Fecal coliforms

Fecal coliforms (1900/100 mL) exceeded the state criteria (>800 in any one day) during the August 28 2014 sampling event. Elevated true color results during the same event (130 PCU; median was 43 PCU for 2014) slightly elevated total phosphorus (0.07 mg/L; median was 0.02), and total suspended solids (5.5 mg/L; median was 4.2 mg/L) along with an elevated water temperature (22.52°C) suggest that conditions may have been conducive for coliforms to survive and perhaps reproduce in this area of the creek. Since the watershed is relatively undeveloped, the high fecal levels could also be the result of wildlife in the area. FDEP is currently in the process of revising their bacterial standards. It is hoped that the proposed indicator organism (*E. coli*), along with microbial source tracking, can give staff a more reliable indicator and help determine the source of the fecal coliform bacteria.

Other Parameters

Other water quality parameters appear to be normal for the area and no other impairments were noted.

Conclusions

Based on ongoing sampling, Tall Timbers met the nutrient thresholds for the Pandhandle East Region. While DO results did not meet Class III water quality standards, low gradient tannic streams normally have low DO values which, in this case, were further exacerbated by the typically low flow conditions. Fecal coliforms (1900/100 mL) exceeded the state criteria (>800 in any one day) during the August 28 2014 sampling event. The cause of the fecal coliform could be the result of wildlife in the area.

Thank you for your interest in maintaining the quality of Leon County's water resources. Please feel free to contact us if you have any questions.

Contact and resources for more information

www.LeonCountyFL.gov/WaterResources

Click here to access the results for all water quality stations sampled in 2014.

Click here for map of watershed – Sample site 66.

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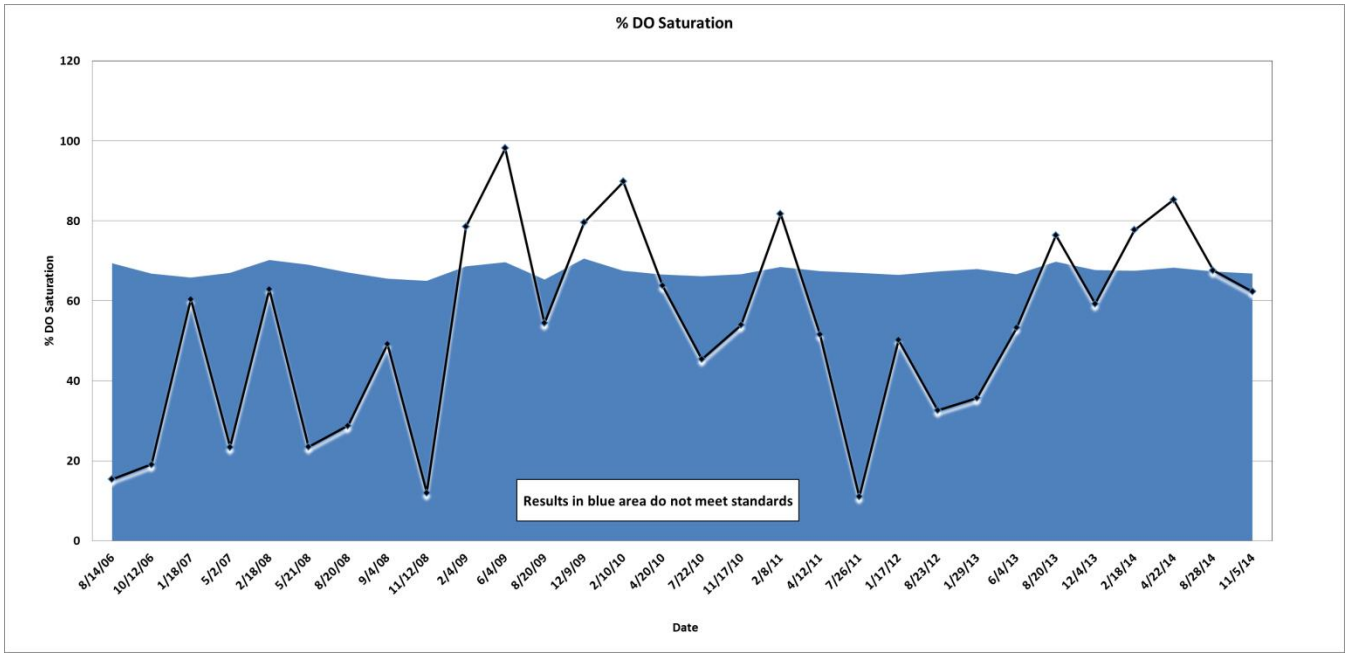

Figure 1. Dissolved Oxygen Percent Saturation results for Tall Timbers Creek.